



SEQUENCE LISTING

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<120> ITI-D1 KUNITZ DOMAIN MUTANTS AS HNE INHIBITORS

<130> D0617.7005US01

<140> 10/038,722

<141> 2002-01-08

<150> US 08/849,406

<151> 1999-07-21

<150> PCT/US95/16349

<151> 1995-12-15

<150> US 08/358,160

<151> 1994-12-16

<150> US 08/133,031

<151> 1992-02-28

<160> 140

<170> PatentIn version 3.1

<210> 1

<211> 276

<212> DNA

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<223> IIIsp::bpti::matureIII (initial fragment)

<400> 1

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tacaatgcta aagcaggcct gtgccagacc tttgtatacg gtgggtgccg tgctaagcgt 180

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gaaagttgtt tagcaaaacc ccatacagaa aattca 276

<210> 2

<211> 92

<212> PRT

<213> Artificial Sequence

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<223> IIIsp::bpti::matureIII (initial fragment)

<400> 2

Met Lys Lys Leu Leu Phe Ala Ile Pro Leu Val Val Pro Phe Tyr Ser  
1 5 10 15  
Gly Ala Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys  
20 25 30  
Lys Ala Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys  
35 40 45  
Gln Thr Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys  
50 55 60  
Ser Ala Glu Asp Cys Met Arg Thr Cys Gly Gly Ala Ala Glu Thr Val  
65 70 75 80  
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<210> 3

<211> 285

<212> DNA

<213> Artificial Sequence

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<223> IIIsp::itiD1::mature III fusion gene

<400> 3  
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gactcttgcc agctgggcta ctcggccggt ccctgcatgg gaatgaccag caggtatttc 120  
tataatggta catccatggc ctgtgagact ttccagtaag gcggtgcat gggcaacggt 180  
aacaacttcg tcacagaaaa ggagtgtctg cagacctgcc gaactgtggg cgccgctgaa 240  
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<210> 4

<211> 95

<212> PRT

<213> Artificial Sequence

<220>

<223> IIIsp::itiD1::mature III fusion gene

<400> 4

Met Lys Lys Leu Leu Phe Ala Ile Pro Leu Val Val Pro Phe Tyr Ser  
1 5 10 15

Gly Ala Lys Glu Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys  
20 25 30

Met Gly Met Thr Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys  
35 40 45

Glu Thr Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val  
50 55 60

Thr Glu Lys Glu Cys Leu Gln Thr Cys Arg Thr Val Gly Ala Ala Glu  
65 70 75 80

Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn Ser Phe  
85 90 95

<210> 5  
<211> 58  
<212> PRT  
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<220>

<223> Consensus Kunitz domain

<400> 5

Arg Pro Asp Phe Cys Leu Leu Pro Ala Glu Thr Gly Pro Cys Arg Ala  
1 5 10 15

Met Ile Pro Arg Phe Tyr Tyr Asn Ala Lys Ser Gly Lys Cys Glu Pro  
20 25 30

Phe Ile Tyr Gly Gly Cys Gly Gly Asn Ala Asn Asn Phe Lys Thr Glu  
35 40 45

Glu Glu Cys Arg Arg Thr Cys Gly Gly Ala  
50 55

<210> 6  
<211> 58  
<212> PRT  
<213> Bos Taurus

<400> 6

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala  
1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 7  
<211> 58  
<212> PRT  
<213> Artificial Sequence

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<223> Epi-HNE-1

<400> 7

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ile Ala  
1 5 10 15  
Phe Phe Pro Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala  
35 40 45  
Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

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<211> 62  
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<223> Epi-HNE-2

<400> 8

Glu Ala Glu Ala Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly  
1 5 10 15  
Pro Cys Ile Ala Phe Phe Pro Arg Tyr Phe Tyr Asn Ala Lys Ala Gly  
20 25 30  
Leu Cys Gln Thr Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn  
35 40 45  
Phe Lys Ser Ala Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55 60

<210> 9  
<211> 58  
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<223> EpiNE7

<400> 9

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Ala  
1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 10  
<211> 58  
<212> PRT  
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<220>

<223> EpiNE3

<400> 10

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Gly  
1 5 10 15

Phe Phe Ser Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
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<210> 11  
<211> 58  
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<223> EpiNE6

<400> 11

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Gly  
1 5 10 15

Phe Phe Gln Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 12  
<211> 58  
<212> PRT

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<223> EpiNE4

<400> 12

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Ala  
1 5 10 15

Ile Phe Pro Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 13

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> EpiNE8

<400> 13

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Ala  
1 5 10 15

Phe Phe Lys Arg Ser Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 14

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> EpiNE5

<400> 14

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ile Ala  
1 5 10 15

Phe Phe Gln Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 15  
<211> 58  
<212> PRT  
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<220>

<223> EpiNE2

<400> 15

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ile Ala  
1 5 10 15

Leu Phe Lys Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 16  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 16

Lys Glu Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Met Gly  
1 5 10 15

Met Thr Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr  
20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Thr Val  
50 55

<210> 17  
<211> 58  
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<220>

<223> BITI-E7-141

<400> 17

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala  
1 5 10 15  
Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Gln Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45  
Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala  
50 55

<210> 18

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> MUTT26A

<400> 18

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala  
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Met Phe Pro Arg Tyr Phe Tyr Asn Gly Ala Ser Met Ala Cys Gln Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45  
Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala  
50 55

<210> 19

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> MUTQE

<400> 19

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala  
1 5 10 15  
Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45  
Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala  
50 55



<210> 20  
<211> 58  
<212> PRT  
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<220>

<223> MUT1619

<400> 20

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Gly  
1 5 10 15  
Met Phe Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Gln Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45  
Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala  
50 55

<210> 21  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> ITI-D1E7

<400> 21

Lys Glu Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala  
1 5 10 15  
Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr  
20 25 30  
Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45  
Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala  
50 55

<210> 22  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> AMINO1

<400> 22

Lys Glu Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala  
1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr  
20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala  
50 55

<210> 23

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> AMINO2

<400> 23

Lys Pro Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Val Ala  
1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr  
20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala  
50 55

<210> 24

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> MUTP1

<400> 24

Arg Pro Asp Phe Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Ile Gly  
1 5 10 15

Met Phe Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr  
20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45

Lys Asp Cys Leu Gln Thr Cys Arg Gly Ala  
50 55

<210> 25

<211> 58

<212> PRT

<213> Homo sapiens

<400> 25

Thr Val Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Arg Ala  
1 5 10 15  
Phe Ile Gln Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu  
20 25 30  
Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu  
35 40 45  
Lys Glu Cys Arg Glu Tyr Cys Gly Val Pro  
50 55

<210> 26

<211> 56

<212> PRT

<213> Artificial Sequence

<220>

<223> Epi-HNE-3

<400> 26

Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Ile Ala Phe Phe  
1 5 10 15  
Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu Phe Pro  
20 25 30  
Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu Lys Glu  
35 40 45  
Cys Arg Glu Tyr Cys Gly Val Pro  
50 55

<210> 27

<211> 56

<212> PRT

<213> Artificial Sequence

<220>

<223> Epi-HNE-4

<400> 27

Glu Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Ile Ala Phe Phe  
1 5 10 15  
Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu Phe Pro  
20 25 30  
Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu Lys Glu  
35 40 45

Cys Arg Glu Tyr Cys Gly Val Pro  
50 55

<210> 28  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 28

Val Arg Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala  
1 5 10 15

Met Ile Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro  
20 25 30

Phe Phe Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu  
35 40 45

Glu Tyr Cys Met Ala Val Cys Gly Ser Ala  
50 55

<210> 29  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> DPI.1.1

<400> 29

Val Arg Glu Val Cys Ser Glu Gln Ala Tyr Thr Gly Pro Cys Ile Ala  
1 5 10 15

Phe Phe Pro Arg Tyr Tyr Phe Asp Val Thr Glu Gly Lys Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Asp Thr Glu  
35 40 45

Glu Tyr Cys Met Ala Val Cys Gly Ser Ala  
50 55

<210> 30  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> DPI.1.2

<400> 30

Val Arg Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Ile Ala  
1 5 10 15

Met Phe Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro  
20 25 30

Phe Val Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu  
35 40 45

Glu Tyr Cys Met Ala Val Cys Gly Ser Ala  
50 55

<210> 31

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.1.3

<400> 31

Val Arg Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Ile Ala  
1 5 10 15

Phe Phe Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Arg Asn Asn Phe Asp Thr Glu  
35 40 45

Glu Tyr Cys Met Ala Val Cys Gly Ser Ala  
50 55

<210> 32

<211> 58

<212> PRT

<213> Homo sapiens

<400> 32

Asn Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Arg Ala  
1 5 10 15

Leu Leu Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln  
20 25 30

Phe Leu Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp  
35 40 45

Glu Ala Cys Asp Asp Ala Cys Trp Arg Ile  
50 55

<210> 33

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.2.1

<400> 33

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Asn Ala Glu Ile Cys Leu Leu Pro Leu Tyr Thr Gly Pro Cys Ile Ala
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Phe Phe Pro Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Gln Thr
                20              25              30
Phe Val Tyr Gly Gly Cys Met Gly Asn Ala Asn Asn Phe Tyr Thr Trp
                35              40              45
Glu Ala Cys Asp Asp Ala Cys Trp Arg Ile
                50              55
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<210> 34

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.2.2

<400> 34

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Asn Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Ile Ala
1              5              10              15
Leu Phe Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln
                20              25              30
Phe Val Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp
                35              40              45
Glu Ala Cys Asp Asp Ala Cys Trp Arg Ile
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<210> 35

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.2.3

<400> 35

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Asn Ala Glu Ile Cys Leu Leu Pro Leu Asp Thr Gly Pro Cys Ile Ala
1              5              10              15
Phe Phe Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Gln Thr
                20              25              30
Phe Val Tyr Gly Gly Cys Met Gly Asn Ala Asn Asn Phe Tyr Thr Trp
                35              40              45
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Glu Ala Cys Asp Asp Ala Cys Trp Arg Ile  
50 55

<210> 36  
<211> 61  
<212> PRT  
<213> Homo sapiens

<400> 36

Val Pro Lys Val Cys Arg Leu Gln Val Ser Val Asp Asp Gln Cys Glu  
1 5 10 15  
Gly Ser Thr Glu Lys Tyr Phe Phe Asn Leu Ser Ser Met Thr Cys Glu  
20 25 30  
Lys Phe Phe Ser Gly Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe  
35 40 45  
Pro Asp Glu Ala Thr Cys Met Gly Phe Cys Ala Pro Lys  
50 55 60

<210> 37  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> DPI.3.1

<400> 37

Val Pro Lys Val Cys Arg Leu Gln Val Val Arg Gly Pro Cys Ile Ala  
1 5 10 15  
Phe Phe Pro Arg Trp Phe Phe Asn Leu Ser Ser Met Thr Cys Val Leu  
20 25 30  
Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Arg Phe Pro Asp Glu  
35 40 45  
Ala Thr Cys Met Gly Phe Cys Ala Pro Lys  
50 55

<210> 38  
<211> 61  
<212> PRT  
<213> Artificial Sequence

<220>

<223> DPI.3.2

<400> 38

Val Pro Lys Val Cys Arg Leu Gln Val Ser Val Asp Asp Gln Cys Ile  
1 5 10 15

Gly Ser Phe Glu Lys Tyr Phe Phe Asn Leu Ala Ser Met Thr Cys Glu  
                   20                                  25                                  30  
 Thr Phe Val Ser Gly Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe  
                   35                                  40                                  45  
 Pro Asp Glu Ala Thr Cys Met Gly Phe Cys Ala Pro Lys  
                   50                                  55                                  60

<210> 39  
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 <212> PRT  
 <213> Artificial Sequence

<220>

<223> DPI.3.3

<400> 39

Val Pro Lys Val Cys Arg Leu Gln Val Val Ala Gly Pro Cys Ile Gly  
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 Phe Phe Lys Arg Tyr Phe Phe Ala Leu Ser Ser Met Thr Cys Glu Thr  
                   20                                  25                                  30  
 Phe Val Ser Gly Gly Cys His Arg Asn Arg Asn Arg Phe Pro Asp Glu  
                   35                                  40                                  45  
 Ala Thr Cys Met Gly Phe Cys Ala Pro Lys  
                   50                                  55

<210> 40  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 40

Ile Pro Ser Phe Cys Tyr Ser Pro Lys Asp Glu Gly Leu Cys Ser Ala  
 1                  5                                  10                                  15  
 Asn Val Thr Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Asp Ala  
                   20                                  25                                  30  
 Phe Thr Tyr Thr Gly Cys Gly Gly Asn Asp Asn Asn Phe Val Ser Arg  
                   35                                  40                                  45  
 Glu Asp Cys Lys Arg Ala Cys Ala Lys Ala  
                   50                                  55

<210> 41  
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 <212> PRT  
 <213> Artificial Sequence

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<223> DPI.4.1

<400> 41

Ile Pro Ser Phe Cys Tyr Ser Pro Lys Ser Ala Gly Pro Cys Val Ala  
1 5 10 15  
Met Phe Pro Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Glu Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Ser Arg  
35 40 45  
Glu Asp Cys Lys Arg Ala Cys Ala Lys Ala  
50 55

<210> 42

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.4.2

<400> 42

Ile Pro Ser Phe Cys Tyr Ser Pro Lys Asp Glu Gly Leu Cys Ile Ala  
1 5 10 15  
Phe Phe Thr Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Asp Ala  
20 25 30  
Phe Thr Tyr Thr Gly Cys Gly Gly Asn Asp Asn Asn Phe Val Ser Arg  
35 40 45  
Glu Asp Cys Lys Arg Ala Cys Ala Lys Ala  
50 55

<210> 43

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> DPI.4.3

<400> 43

Ile Pro Ser Phe Cys Tyr Ser Pro Lys Asp Thr Gly Pro Cys Ile Ala  
1 5 10 15  
Phe Phe Thr Arg Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Asp Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Gly Gly Asn Asp Asn Asn Phe Val Ser Arg  
35 40 45

Glu Asp Cys Lys Arg Ala Cys Ala Lys Ala  
50 55

<210> 44  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 44

Met His Ser Phe Cys Ala Phe Lys Ala Asp Asp Gly Pro Cys Lys Ala  
1 5 10 15

Ile Met Lys Arg Phe Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Glu  
20 25 30

Phe Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn Arg Phe Glu Ser Leu  
35 40 45

Glu Glu Cys Lys Lys Met Cys Thr Arg Asp  
50 55

<210> 45  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> DPI.5.1

<400> 45

Met His Ser Phe Cys Ala Phe Lys Ala Ser Ala Gly Pro Cys Val Ala  
1 5 10 15

Met Phe Pro Arg Tyr Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Arg Phe Glu Ser Leu  
35 40 45

Glu Glu Cys Lys Lys Met Cys Thr Arg Asp  
50 55

<210> 46  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> DPI.5.2

<400> 46

Met His Ser Phe Cys Ala Phe Lys Ala Asp Asp Gly Pro Cys Ile Ala  
1 5 10 15

Ile Phe Lys Arg Phe Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Glu  
20 25 30  
Phe Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn Arg Phe Glu Ser Leu  
35 40 45  
Glu Glu Cys Lys Lys Met Cys Thr Arg Asp  
50 55

<210> 47  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> DPI.5.3

<400> 47

Met His Ser Phe Cys Ala Phe Lys Ala Tyr Thr Gly Pro Cys Ile Ala  
1 5 10 15  
Phe Phe Lys Arg Phe Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Thr  
20 25 30  
Phe Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn Arg Phe Glu Ser Leu  
35 40 45  
Glu Glu Cys Lys Lys Met Cys Thr Arg Asp  
50 55

<210> 48  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 48

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Arg Gly  
1 5 10 15  
Tyr Ile Thr Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg  
20 25 30  
Phe Lys Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu  
35 40 45  
Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly  
50 55

<210> 49  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> DPI.6.1

<400> 49

Lys Pro Asp Phe Cys Phe Leu Glu Glu Ser Ala Gly Pro Cys Val Ala  
1 5 10 15

Met Phe Pro Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Glu Thr Leu  
35 40 45

Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly  
50 55

<210> 50

<211> 58

<212> PRT

<213> Artificial Sequence

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<223> DPI.6.2

<400> 50

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Tyr Phe Thr Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg  
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Phe Lys Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu  
35 40 45

Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly  
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<210> 51

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<212> PRT

<213> Artificial Sequence

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<223> DPI.6.3

<400> 51

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Phe Phe Thr Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg  
20 25 30

Phe Val Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu  
35 40 45

Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly  
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<223> DPI.6.4

<400> 52

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Val Gly  
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Phe Val Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu  
35 40 45  
Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly  
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<210> 53  
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<223> DPI.6.5

<400> 53

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Pro Cys Val Gly  
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20 25 30  
Phe Val Tyr Gly Gly Cys Gln Gly Asn Met Asn Asn Phe Glu Thr Leu  
35 40 45  
Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly  
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<223> DPI.6.6

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Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Pro Cys Val Gly  
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20 25 30  
Phe Val Tyr Gly Gly Cys Gln Gly Asn Met Asn Asn Phe Glu Thr Leu  
35 40 45  
Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly  
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<210> 55

<211> 58

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<223> DPI.6.7

<400> 55

Lys Pro Asp Phe Cys Phe Leu Glu Glu Asp Pro Gly Pro Cys Ile Gly  
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Phe Phe Pro Arg Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg  
20 25 30  
Phe Val Tyr Gly Gly Cys Gln Gly Asn Met Asn Asn Phe Glu Thr Leu  
35 40 45  
Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly  
50 55

<210> 56

<211> 58

<212> PRT

<213> Homo sapiens

<400> 56

Gly Pro Ser Trp Cys Leu Thr Pro Ala Asp Arg Gly Leu Cys Arg Ala  
1 5 10 15  
Asn Glu Asn Arg Phe Tyr Tyr Asn Ser Val Ile Gly Lys Cys Arg Pro  
20 25 30  
Phe Lys Tyr Ser Gly Cys Gly Gly Asn Glu Asn Asn Phe Thr Ser Lys  
35 40 45  
Gln Glu Cys Leu Arg Ala Cys Lys Lys Gly  
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<223> DPI.7.1

<400> 57

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			20				25						30		
Phe	Pro	Tyr	Gly	Gly	Cys	Gln	Gly	Asn	Gly	Asn	Asn	Phe	Thr	Ser	Lys
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<223> DPI.7.2

<400> 58

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<223> DPI.7.3

<400> 59

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Phe Lys Tyr Ser Gly Cys Gly Gly Asn Glu Asn Asn Phe Lys Ser Lys  
35 40 45

Gln Glu Cys Leu Arg Ala Cys Lys Lys Gly  
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<210> 60  
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<223> DPI.7.4

<400> 60

Gly Pro Ser Trp Cys Leu Thr Pro Ala Val Arg Gly Pro Cys Val Ala  
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Phe Phe Asn Arg Phe Tyr Tyr Asn Ser Val Ile Gly Lys Cys Arg Pro  
20 25 30

Phe Lys Tyr Gly Gly Cys Gly Gly Asn Glu Asn Asn Phe Lys Ser Lys  
35 40 45

Gln Glu Cys Leu Arg Ala Cys Lys Lys Gly  
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<210> 61  
<211> 58  
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<223> DPI.7.5

<400> 61

Gly Pro Ser Trp Cys Leu Thr Pro Ala Asp Arg Gly Pro Cys Ile Ala  
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Phe Phe Pro Arg Trp Tyr Tyr Asn Ser Val Ile Gly Lys Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Gly Gly Asn Glu Asn Asn Phe Ala Ser Lys  
35 40 45

Gln Glu Cys Leu Arg Ala Cys Lys Lys Gly  
50 55

<210> 62  
<211> 58  
<212> PRT



<213> Homo sapiens

<400> 62

Glu Thr Asp Ile Cys Lys Leu Pro Lys Asp Glu Gly Thr Cys Arg Asp  
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Phe Ile Leu Lys Trp Tyr Tyr Asp Pro Asn Thr Lys Ser Cys Ala Arg  
20 25 30  
Phe Trp Tyr Gly Gly Cys Gly Gly Asn Glu Asn Lys Phe Gly Ser Gln  
35 40 45  
Lys Glu Cys Glu Lys Val Cys Ala Pro Val  
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<210> 63

<211> 58

<212> PRT

<213> Artificial Sequence

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<223> DPI.8.1

<400> 63

Glu Thr Asp Ile Cys Lys Leu Pro Lys Val Arg Gly Pro Cys Ile Ala  
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Phe Phe Pro Arg Trp Tyr Tyr Asp Pro Asn Thr Lys Ser Cys Val Leu  
20 25 30  
Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Gly Ser Gln  
35 40 45  
Lys Glu Cys Glu Lys Val Cys Ala Pro Val  
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<223> DPI.8.2

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Phe Val Tyr Gly Gly Cys Gly Gly Asn Glu Asn Lys Phe Gly Ser Gln  
35 40 45

Lys Glu Cys Glu Lys Val Cys Ala Pro Val  
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<210> 65  
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<223> DPI.8.3

<400> 65

Glu Thr Asp Ile Cys Lys Leu Pro Lys Asp Glu Gly Pro Cys Ile Ala  
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Phe Val Tyr Gly Gly Cys Gly Gly Asn Glu Asn Lys Phe Gly Ser Gln  
35 40 45  
Lys Glu Cys Glu Lys Val Cys Ala Pro Val  
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<210> 66  
<211> 58  
<212> PRT  
<213> Homo sapiens

<400> 66

Leu Pro Asn Val Cys Ala Phe Pro Met Glu Lys Gly Pro Cys Gln Thr  
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Tyr Met Thr Arg Trp Phe Phe Asn Phe Glu Thr Gly Glu Cys Glu Leu  
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Phe Ala Tyr Gly Gly Cys Gly Gly Asn Ser Asn Asn Phe Leu Arg Lys  
35 40 45  
Glu Lys Cys Glu Lys Phe Cys Lys Phe Thr  
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<210> 67  
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<223> DPI.9.1

<400> 67

Leu Pro Asn Val Cys Ala Phe Pro Met Val Arg Gly Pro Cys Ile Ala  
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Phe Phe Pro Arg Trp Phe Phe Asn Phe Glu Thr Gly Glu Cys Val Leu  
20 25 30

Phe Val Tyr Gly Gly Cys Gln Gly Asn Gly Asn Asn Phe Leu Arg Lys  
35 40 45

Glu Lys Cys Glu Lys Phe Cys Lys Phe Thr  
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<210> 68  
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<223> DPI.9.2

<400> 68

Leu Pro Asn Val Cys Ala Phe Pro Met Glu Lys Gly Pro Cys Ile Ala  
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Tyr Phe Thr Arg Trp Phe Phe Asn Phe Glu Thr Gly Glu Cys Glu Leu  
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Phe Ala Tyr Gly Gly Cys Gly Gly Asn Ser Asn Asn Phe Leu Arg Lys  
35 40 45

Glu Lys Cys Glu Lys Phe Cys Lys Phe Thr  
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<210> 69  
<211> 58  
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<213> Artificial Sequence

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<223> DPI.9.3

<400> 69

Leu Pro Asn Val Cys Ala Phe Pro Met Glu Lys Gly Pro Cys Ile Ala  
1 5 10 15

Tyr Phe Pro Arg Trp Phe Phe Asn Phe Glu Thr Gly Glu Cys Val Leu  
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Phe Val Tyr Gly Gly Cys Gly Gly Asn Ser Asn Asn Phe Leu Arg Lys  
35 40 45

Glu Lys Cys Glu Lys Phe Cys Lys Phe Thr  
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<213> Artificial Sequence

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<212> DNA

<213> Artificial Sequence

<220>

<223> Plasmid pHIL-D2 (MFalphaPrePro::EPI-HNE-3)

<400> 71

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<213> Artificial Sequence

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<220>

<223> Plasmid pHIL-D2 (MFalphaPrePro::EPI-HNE-3)

<400> 72

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35          40          45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
50          55          60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65          70          75          80

Ser Leu Asp Lys Arg Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro
85          90          95

Cys Ile Ala Phe Phe Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys
100         105         110

Cys Val Leu Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe
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<210> 73  
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<213> Artificial Sequence

<220>

<223> BstBI-AatII-EcoRI cassette for expression of Epi-HNE-4

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<210> 74  
<211> 141  
<212> PRT  
<213> Artificial Sequence

<220>

<223> BstBI-AatII-EcoRI cassette for expression of Epi-HNE-4

<400> 74

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Ser	Leu	Asp	Lys	Arg	Glu	Ala	Cys	Asn	Leu	Pro	Ile	Val	Arg	Gly	Pro
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Cys	Ile	Ala	Phe	Phe	Pro	Arg	Trp	Ala	Phe	Asp	Ala	Val	Lys	Gly	Lys
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Cys	Val	Leu	Phe	Pro	Tyr	Gly	Gly	Cys	Gln	Gly	Asn	Gly	Asn	Lys	Phe
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<212> DNA  
<213> Artificial Sequence

<220>

<223> pD2pick (MFalphaPrePro::EPI-NHE-3) circular dsDNA

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Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val  
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Ser Leu Asp Lys Arg Ala Ala Cys Asn Leu Pro Ile Val Arg Gly Pro  
85 90 95  
Cys Ile Ala Phe Phe Pro Arg Trp Ala Phe Asp Ala Val Lys Gly Lys  
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Ala Cys Asn Leu Pro Ile Val Arg Gly Pro Cys Arg Ala Phe Ile Gln  
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Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu Phe Pro Tyr  
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Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu Lys Glu Cys  
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Glu Arg Phe Lys Tyr Gly Gly Cys Leu Gly Asn Met Asn Asn Phe Glu  
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<222> (43)..(43)  
<223> Xaa is Gly or Ala

<220>  
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<222> (45)..(45)  
<223> Xaa is Glu, Gly, Gln or Arg

<400> 83

Ala	Ala	Glu	Met	His	Ser	Phe	Cys	Ala	Phe	Lys	Ala	Xaa	Xaa	Gly	Xaa
1				5					10					15	

Cys	Xaa	Xaa	Xaa	Phe	Xaa	Arg	Xaa	Phe	Phe	Asn	Ile	Phe	Thr	Arg	Gln
			20				25						30		

Cys	Xaa	Xaa	Phe	Xaa	Tyr	Gly	Gly	Cys	Xaa	Xaa	Asn	Xaa	Asn	Arg	Phe
			35			40					45				

Glu	Ser	Leu	Glu	Glu	Cys	Lys	Lys	Met	Cys	Thr	Arg	Asp	Gly	Ala
50					55						60			

<210> 84  
<211> 201  
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<223> LACI-D2 hNE library

<220>  
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<222> (34)..(34)  
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<220>  
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<222> (56)..(56)  
<223> n is a or t

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<223> n is a or c

<220>  
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<222> (62)..(62)  
<223> n is a, c, g, or t

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<223> n is c or g

<220>

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<222> (98)..(98)

<223> n is a or t

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<222> (100)..(100)

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<220>

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<222> (101)..(101)

<223> n is a, c, g, or t

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<222> (106)..(106)

<223> n is a, c, or g

<220>

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<222> (107)..(107)

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<222> (122)..(122)

<223> n is a, c, or t

<220>

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<222> (125)..(125)

<223> n is c or g

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<222> (130)..(130)

<223> n is a, c or g

<220>

<221> misc\_feature

<222> (131)..(131)

<223> n is c, g or t

<400> 84

ggcgccaagc ctgacttctg cttcctcgag gagnntnnng ggnnttgcnt tgntnntttt 60

nnncgttnnt tctataataa ccaggctaag caatgtnnngn nattcnata tgggtggttgc 120

nggntaatn ngaacaactt cgagactcta gaagagtgtg agaacatatg tgaggatggt 180

ggtgctgaga ctgttgagtc t 201

<210> 85  
<211> 67  
<212> PRT  
<213> Artificial Sequence

<220>

<223> LACI-D2 hNE library

<220>

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<222> (12)..(12)

<223> Xaa is Cys, Arg, Ser, Gly, Tyr, His, Asp or Asn

<220>

<221> misc\_feature

<222> (13)..(13)

<223> Xaa is Pro, His, Thr, Asn, Lys, Arg, Ser, Ala, Glu, Gly, Asp or Gln

<220>

<221> misc\_feature

<222> (15)..(15)

<223> Xaa is His, Arg, Pro, Leu, Asn, Ser, Ile or Thr

<220>

<221> misc\_feature

<222> (17)..(17)

<223> Xaa is Val or Ile

<220>

<221> misc\_feature

<222> (18)..(18)

<223> Xaa is Gly or Ala

<220>

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<222> (19)..(19)

<223> Xaa is Phe, Leu, Ile, Val, Tyr, His, Asn or Asp

<220>

<221> misc\_feature

<222> (21)..(21)

<223> Xaa is Ile, Asn, Gln, Met, Leu, His, Lys, Pro, Thr or Arg

<220>

<221> misc\_feature

<222> (23)..(23)

<223> Xaa is Cys, Phe, Leu, Tyr or Trp

<220>

<221> misc\_feature

<222> (33)..(33)

<223> Xaa is Leu, Gln, Glu or Val

<220>

<221> misc\_feature

<222> (34)..(34)

<223> Xaa is Gln, Gly, Leu, Pro, Thr, Lys, Val, Ile, Glu, Ala or Arg

<220>  
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<220>  
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<223> Xaa is Gln, Pro, Thr, Lys, Val, Met, Glu, Ala or Leu

<220>  
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<223> Xaa is Gly or Ala

<220>  
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<222> (44)..(44)  
<223> Xaa is Arg, Gly, Lys, Glu, Leu, Gln, Met or Val

<400> 85

Gly Ala Lys Pro Asp Phe Cys Phe Leu Glu Glu Xaa Xaa Gly Xaa Cys  
1 5 10 15

Xaa Xaa Xaa Phe Xaa Arg Xaa Phe Tyr Asn Asn Gln Ala Lys Gln Cys  
20 25 30

Xaa Xaa Phe Xaa Tyr Gly Gly Cys Xaa Xaa Asn Xaa Asn Asn Phe Glu  
35 40 45

Thr Leu Glu Glu Cys Lys Asn Ile Cys Glu Asp Gly Gly Ala Glu Thr  
50 55 60

Val Glu Ser  
65

<210> 86  
<211> 51  
<212> PRT  
<213> Artificial Sequence

<220>

<223> definition of aprotonin-like Kunitz domain (p. 11)

<220>  
<221> misc\_feature  
<222> (2)..(7)  
<223> Xaa is any amino acid

<220>  
<221> misc\_feature  
<222> (9)..(9)  
<223> Xaa is any amino acid

<220>  
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<222> (11)..(18)  
<223> Xaa is any amino acid

<220>  
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<222> (19)..(19)  
<223> Xaa is any Tyr or Phe

<220>  
<221> misc\_feature  
<222> (20)..(25)  
<223> Xaa is any amino acid

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<222> (27)..(28)  
<223> Xaa is any amino acid

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<222> (30)..(30)  
<223> Xaa is any amino acid  
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<222> (31)..(31)  
<223> Xaa is Tyr, Trp or Phe

<220>  
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<222> (32)..(32)  
<223> Xaa is any amino acid

<220>  
<221> misc\_feature  
<222> (35)..(38)  
<223> Xaa is any amino acid

<220>  
<221> misc\_feature  
<222> (39)..(39)  
<223> Xaa is Asn or Gly

<220>  
<221> misc\_feature  
<222> (40)..(40)  
<223> Xaa is any amino acid

<220>  
<221> misc\_feature  
<222> (41)..(41)  
<223> Xaa is Phe or Tyr

<220>  
<221> misc\_feature  
<222> (42)..(46)  
<223> Xaa is any amino acid

<220>  
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<222> (48)..(50)  
<223> Xaa is any amino acid

<400> 86

Cys Xaa Xaa Xaa Xaa Xaa Xaa Gly Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Phe Xaa Xaa Xaa  
20 25 30  
Gly Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa  
35 40 45  
Xaa Xaa Cys  
50

<210> 87

<211> 58

<212> PRT

<213> Bos Taurus

<400> 87

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala  
1 5 10 15  
Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45  
Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 88

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> Engineered B-PTI from MARK87

<400> 88

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Thr Lys Ala  
1 5 10 15  
Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30  
Phe Val Tyr Gly Gly Thr Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45  
Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55



<210> 89  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Engineered B-PTI from MARK87

<400> 89

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Ala Lys Ala  
1 5 10 15  
Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30  
Phe Val Tyr Gly Gly Ala Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45  
Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 90  
<211> 67  
<212> PRT  
<213> Bos taurus (Bovine Colostrum)

<400> 90

Phe Gln Thr Pro Pro Asp Leu Cys Gln Leu Pro Gln Ala Arg Gly Pro  
1 5 10 15  
Cys Lys Ala Ala Leu Leu Arg Tyr Phe Tyr Asn Ser Thr Ser Asn Ala  
20 25 30  
Cys Glu Pro Phe Thr Tyr Gly Gly Cys Gln Gly Asn Asn Asn Asn Phe  
35 40 45  
Glu Thr Thr Glu Met Cys Leu Arg Ile Cys Glu Pro Pro Gln Gln Thr  
50 55 60  
Asp Lys Ser  
65

<210> 91  
<211> 60  
<212> PRT  
<213> Bos Taurus (Bovine serum)

<400> 91

Thr Glu Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys  
1 5 10 15  
Lys Ala Ala Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Phe Cys  
20 25 30

Glu Thr Phe Val Tyr Gly Gly Cys Arg Ala Lys Ser Asn Asn Phe Lys  
35 40 45  
Ser Ala Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55 60

<210> 92  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Semisynthetic BPTI, TSCH87

<400> 92

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Val Ala  
1 5 10 15  
Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45  
Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 93  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Semisynthetic BPTI, TSCH87

<400> 93

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Gly Ala  
1 5 10 15  
Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45  
Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 94  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Semisynthetic BPTI, TSCH87

<400> 94

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ala Ala  
1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 95

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> Semisynthetic BPTI, TSCH87

<400> 95

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Leu Ala  
1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 96

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> Semisynthetic BPTI, TSCH87

<400> 96

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Ile Ala  
1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
 35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
 50 55

<210> 97  
 <211> 58  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Engineered BPTI, AUER87

<400> 97

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala  
 1 5 10 15

Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
 20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
 35 40 45

Glu Asp Cys Glu Arg Thr Cys Gly Gly Ala  
 50 55

<210> 98  
 <211> 60  
 <212> PRT  
 <213> Dendroaspis polylepis polylepis (Black mamba venom I)

<400> 98

Gln Pro Leu Arg Lys Leu Cys Ile Leu His Arg Asn Pro Gly Arg Cys  
 1 5 10 15

Tyr Gln Lys Ile Pro Ala Phe Tyr Tyr Asn Gln Lys Lys Lys Gln Cys  
 20 25 30

Glu Gly Phe Thr Trp Ser Gly Cys Gly Gly Asn Ser Asn Arg Phe Lys  
 35 40 45

Thr Ile Glu Glu Cys Arg Arg Thr Cys Ile Arg Lys  
 50 55 60

<210> 99  
 <211> 57  
 <212> PRT  
 <213> Dendroaspis polylepis polylepis (Black mamba venom K)

<400> 99

Ala Ala Lys Tyr Cys Lys Leu Pro Leu Arg Ile Gly Pro Cys Lys Arg  
 1 5 10 15

Lys Ile Pro Ser Phe Tyr Tyr Lys Trp Lys Ala Lys Gln Cys Leu Pro  
20 25 30

Phe Asp Tyr Ser Gly Cys Gly Gly Asn Ala Asn Arg Phe Lys Thr Ile  
35 40 45

Glu Glu Cys Arg Arg Thr Cys Val Gly  
50 55

<210> 100  
<211> 57  
<212> PRT  
<213> Hemachatus hemachates

<400> 100

Arg Pro Asp Phe Cys Glu Leu Pro Ala Glu Thr Gly Leu Cys Lys Ala  
1 5 10 15

Tyr Ile Arg Ser Phe His Tyr Asn Leu Ala Ala Gln Gln Cys Leu Gln  
20 25 30

Phe Ile Tyr Gly Gly Cys Gly Gly Asn Ala Asn Arg Phe Lys Thr Ile  
35 40 45

Asp Glu Cys Arg Arg Thr Cys Val Gly  
50 55

<210> 101  
<211> 57  
<212> PRT  
<213> Naja nivea

<400> 101

Arg Pro Arg Phe Cys Glu Leu Pro Ala Glu Thr Gly Leu Cys Lys Ala  
1 5 10 15

Arg Ile Arg Ser Phe His Tyr Asn Arg Ala Ala Gln Gln Cys Leu Glu  
20 25 30

Phe Ile Tyr Gly Gly Cys Gly Gly Asn Ala Asn Arg Phe Lys Thr Ile  
35 40 45

Asp Glu Cys His Arg Thr Cys Val Gly  
50 55

<210> 102  
<211> 60  
<212> PRT  
<213> Vipera russelli

<400> 102

His Asp Arg Pro Thr Phe Cys Asn Leu Pro Pro Glu Ser Gly Arg Cys  
1 5 10 15

Arg Gly His Ile Arg Arg Ile Tyr Tyr Asn Leu Glu Ser Asn Lys Cys  
20 25 30  
Lys Val Phe Phe Tyr Gly Gly Cys Gly Gly Asn Ala Asn Asn Phe Glu  
35 40 45  
Thr Arg Asp Glu Cys Arg Glu Thr Cys Gly Gly Lys  
50 55 60

<210> 103  
<211> 64  
<212> PRT  
<213> Caretta sp. (Red sea turtle egg white)

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Xaa is Glu or Gln

<400> 103

Xaa Gly Asp Lys Arg Asp Ile Cys Arg Leu Pro Pro Glu Gln Gly Pro  
1 5 10 15  
Cys Lys Gly Arg Leu Pro Arg Tyr Phe Tyr Asn Pro Ala Ser Arg Met  
20 25 30  
Cys Glu Ser Phe Ile Tyr Gly Gly Cys Lys Gly Asn Lys Asn Asn Phe  
35 40 45  
Lys Thr Lys Ala Glu Cys Val Arg Ala Cys Arg Pro Pro Glu Arg Pro  
50 55 60

<210> 104  
<211> 58  
<212> PRT  
<213> Helix pomania

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Xaa is Glu or Gln

<400> 104

Xaa Gly Arg Pro Ser Phe Cys Asn Leu Pro Ala Glu Thr Gly Pro Cys  
1 5 10 15  
Lys Ala Ser Ile Arg Gln Tyr Tyr Tyr Asn Ser Lys Ser Gly Gly Cys  
20 25 30  
Gln Gln Phe Ile Tyr Gly Gly Cys Arg Gly Asn Gln Asn Arg Phe Asp  
35 40 45  
Thr Thr Gln Gln Cys Gln Gly Val Cys Val  
50 55

<210> 105  
<211> 57  
<212> PRT  
<213> Dendroaspis angusticeps (Eastern green mamba C13 S1 C3 toxin)

<400> 105

Ala	Ala	Lys	Tyr	Cys	Lys	Leu	Pro	Val	Arg	Tyr	Gly	Pro	Cys	Lys	Lys
1				5					10					15	
Lys	Phe	Pro	Ser	Phe	Tyr	Tyr	Asn	Trp	Lys	Ala	Lys	Gln	Cys	Leu	Pro
			20					25					30		
Phe	Asn	Tyr	Ser	Gly	Cys	Gly	Gly	Asn	Ala	Asn	Arg	Phe	Lys	Thr	Ile
			35				40					45			
Glu	Glu	Cys	Arg	Arg	Thr	Cys	Val	Gly							
			50				55								

<210> 106  
<211> 59  
<212> PRT  
<213> Dendroaspis angusticeps (Eastern green mamba C13 S2 C3 toxin)

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Xaa is Glu or Gln

<400> 106

Xaa	Pro	Arg	Arg	Lys	Leu	Cys	Ile	Leu	His	Arg	Asn	Pro	Gly	Arg	Cys
1				5					10					15	
Tyr	Asp	Lys	Ile	Pro	Ala	Phe	Tyr	Tyr	Asn	Gln	Lys	Lys	Lys	Gln	Cys
			20					25					30		
Glu	Arg	Phe	Asp	Trp	Ser	Gly	Cys	Gly	Gly	Asn	Ser	Asn	Arg	Phe	Lys
			35				40					45			
Thr	Ile	Glu	Glu	Cys	Arg	Arg	Thr	Cys	Ile	Gly					
			50				55								

<210> 107  
<211> 57  
<212> PRT  
<213> Dendroaspis polylepis polylepis (Black mamba B toxin)

<400> 107

Arg	Pro	Tyr	Ala	Cys	Glu	Leu	Ile	Val	Ala	Ala	Gly	Pro	Cys	Met	Phe
1				5					10					15	
Phe	Ile	Ser	Ala	Phe	Tyr	Tyr	Ser	Lys	Gly	Ala	Asn	Lys	Cys	Tyr	Pro
			20					25					30		
Phe	Thr	Tyr	Ser	Gly	Cys	Arg	Gly	Asn	Ala	Asn	Arg	Phe	Lys	Thr	Ile
			35				40					45			

Glu Glu Cys Arg Arg Thr Cys Val Val  
50 55

<210> 108  
<211> 59  
<212> PRT  
<213> Dendroaspis polylepis polylepis (Black mamba E toxin)

<400> 108

Leu Gln His Arg Thr Phe Cys Lys Leu Pro Ala Glu Pro Gly Pro Cys  
1 5 10 15

Lys Ala Ser Ile Pro Ala Phe Tyr Tyr Asn Trp Ala Ala Lys Lys Cys  
20 25 30

Gln Leu Phe His Tyr Gly Gly Cys Lys Gly Asn Ala Asn Arg Phe Ser  
35 40 45

Thr Ile Glu Lys Cys Arg His Ala Cys Val Gly  
50 55

<210> 109  
<211> 61  
<212> PRT  
<213> Vipera ammodytes TI toxin

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Xaa is Glu or Gln

<400> 109

Xaa Asp His Pro Lys Phe Cys Tyr Leu Pro Ala Asp Pro Gly Arg Cys  
1 5 10 15

Lys Ala His Ile Pro Arg Phe Tyr Tyr Asp Ser Ala Ser Asn Lys Cys  
20 25 30

Asn Lys Phe Ile Tyr Gly Gly Cys Pro Gly Asn Ala Asn Asn Phe Lys  
35 40 45

Thr Trp Asp Glu Cys Arg Gln Thr Cys Gly Ala Ser Ala  
50 55 60

<210> 110  
<211> 62  
<212> PRT  
<213> Vipera ammodytes CTI toxin

<400> 110

Arg Asp Arg Pro Lys Phe Cys Tyr Leu Pro Ala Asp Pro Gly Arg Cys  
1 5 10 15

Leu Ala Tyr Met Pro Arg Phe Tyr Tyr Asn Pro Ala Ser Asn Lys Cys  
20 25 30



Glu Lys Phe Ile Tyr Gly Gly Cys Arg Gly Asn Ala Asn Asn Phe Lys  
35 40 45

Thr Trp Asp Glu Cys Arg His Thr Cys Val Ala Ser Gly Ile  
50 55 60

<210> 111

<211> 62

<212> PRT

<213> Bungarus fasciatus VIII B toxin

<400> 111

Lys Asn Arg Pro Thr Phe Cys Asn Leu Leu Pro Glu Thr Gly Arg Cys  
1 5 10 15

Asn Ala Leu Ile Pro Ala Phe Tyr Tyr Asn Ser His Leu His Lys Cys  
20 25 30

Gln Lys Phe Asn Tyr Gly Gly Cys Gly Gly Asn Ala Asn Asn Phe Lys  
35 40 45

Thr Ile Asp Glu Cys Gln Arg Thr Cys Ala Ala Lys Tyr Gly  
50 55 60

<210> 112

<211> 59

<212> PRT

<213> Anemonia sulcata

<400> 112

Ile Asn Gly Asp Cys Glu Leu Pro Lys Val Val Gly Pro Cys Arg Ala  
1 5 10 15

Arg Phe Pro Arg Tyr Tyr Tyr Asn Ser Ser Ser Lys Arg Cys Glu Lys  
20 25 30

Phe Ile Tyr Gly Gly Cys Gly Gly Asn Ala Asn Asn Phe His Thr Leu  
35 40 45

Glu Glu Cys Glu Lys Val Cys Gly Val Arg Ser  
50 55

<210> 113

<211> 56

<212> PRT

<213> Homo sapiens

<400> 113

Lys Glu Asp Ser Cys Gln Leu Gly Tyr Ser Ala Gly Pro Cys Met Gly  
1 5 10 15

Met Thr Ser Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr  
20 25 30

Phe Gln Tyr Gly Gly Cys Met Gly Asn Gly Asn Asn Phe Val Thr Glu  
35 40 45

Lys Glu Cys Leu Gln Thr Cys Arg  
50 55

<210> 114  
<211> 61  
<212> PRT  
<213> Homo sapiens

<400> 114

Thr Val Ala Ala Cys Asn Leu Pro Val Ile Arg Gly Pro Cys Arg Ala  
1 5 10 15

Phe Ile Gln Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Leu  
20 25 30

Phe Pro Tyr Gly Gly Cys Gln Gly Asn Gly Asn Lys Phe Tyr Ser Glu  
35 40 45

Lys Glu Cys Arg Glu Tyr Cys Gly Val Pro Gly Asp Glu  
50 55 60

<210> 115  
<211> 60  
<212> PRT  
<213> Bungarus multicinctus (beta bungarotoxin B1)

<400> 115

Arg Gln Arg His Arg Asp Cys Asp Lys Pro Pro Asp Lys Gly Asn Cys  
1 5 10 15

Gly Pro Val Arg Ala Phe Tyr Tyr Asp Thr Arg Leu Lys Thr Cys Lys  
20 25 30

Ala Phe Gln Tyr Arg Gly Cys Asp Gly Asp His Gly Asn Phe Lys Thr  
35 40 45

Glu Thr Leu Cys Arg Cys Glu Cys Leu Val Tyr Pro  
50 55 60

<210> 116  
<211> 60  
<212> PRT  
<213> Bungarus multicinctus (beta bungarotoxin B2)

<400> 116

Arg Lys Arg His Pro Asp Cys Asp Lys Pro Pro Asp Thr Lys Ile Cys  
1 5 10 15

Gln Thr Val Arg Ala Phe Tyr Tyr Lys Pro Ser Ala Lys Arg Cys Val  
20 25 30

Gln Phe Arg Tyr Gly Gly Cys Asp Gly Asp His Gly Asn Phe Lys Ser  
35 40 45

Asp His Leu Cys Arg Cys Glu Cys Glu Leu Tyr Arg  
50 55 60

<210> 117  
<211> 58  
<212> PRT  
<213> Bos taurus

<400> 117

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala  
1 5 10 15

Lys Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Phe Cys Glu Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Lys Ala Lys Ser Asn Asn Phe Arg Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 118  
<211> 61  
<212> PRT  
<213> Tachypleus tridentatus

<400> 118

Thr Glu Arg Gly Phe Leu Asp Cys Thr Ser Pro Pro Val Thr Gly Pro  
1 5 10 15

Cys Arg Ala Gly Phe Lys Arg Tyr Asn Tyr Asn Thr Arg Thr Lys Gln  
20 25 30

Cys Glu Pro Phe Lys Tyr Gly Gly Cys Lys Gly Asn Gly Asn Arg Tyr  
35 40 45

Lys Ser Glu Gln Asp Cys Leu Asp Ala Cys Ser Gly Phe  
50 55 60

<210> 119  
<211> 62  
<212> PRT  
<213> Bombyx mori

<220>  
<221> misc\_feature  
<222> (14)..(14)  
<223> Xaa is Phe or Gly

<400> 119

Asp Glu Pro Thr Thr Asp Leu Pro Ile Cys Glu Gln Ala Xaa Asp Ala  
1 5 10 15

Gly Leu Cys Phe Gly Tyr Met Lys Leu Tyr Ser Tyr Asn Gln Glu Thr  
20 25 30

Lys Asn Cys Glu Glu Phe Ile Tyr Gly Gly Cys Gln Gly Asn Asp Asn  
35 40 45

Arg Phe Ser Thr Leu Ala Glu Cys Glu Gln Lys Cys Ile Asn  
50 55 60

<210> 120

<211> 56

<212> PRT

<213> Bos taurus

<400> 120

Lys Ala Asp Ser Cys Gln Leu Asp Tyr Ser Gln Gly Pro Cys Leu Gly  
1 5 10 15

Leu Phe Lys Arg Tyr Phe Tyr Asn Gly Thr Ser Met Ala Cys Glu Thr  
20 25 30

Phe Leu Tyr Gly Gly Cys Met Gly Asn Leu Asn Asn Phe Leu Ser Gln  
35 40 45

Lys Glu Cys Leu Gln Thr Cys Arg  
50 55

<210> 121

<211> 61

<212> PRT

<213> Bos taurus

<400> 121

Thr Val Glu Ala Cys Asn Leu Pro Ile Val Gln Gly Pro Cys Arg Ala  
1 5 10 15

Phe Ile Gln Leu Trp Ala Phe Asp Ala Val Lys Gly Lys Cys Val Arg  
20 25 30

Phe Ser Tyr Gly Gly Cys Lys Gly Asn Gly Asn Lys Phe Tyr Ser Gln  
35 40 45

Lys Glu Cys Lys Glu Tyr Cys Gly Ile Pro Gly Glu Ala  
50 55 60

<210> 122

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> Engineered BPTI (KR15, ME52)

<400> 122

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Arg Ala  
1 5 10 15  
Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr  
20 25 30  
Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45  
Glu Asp Cys Glu Arg Thr Cys Gly Gly Ala  
50 55

<210> 123

<211> 59

<212> PRT

<213> Artificial Sequence

<220>

<223> Isoaprotinin G-1

<220>

<221> misc\_feature

<222> (1)..(1)

<223> Xaa is Glu or Gln

<400> 123

Xaa Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys  
1 5 10 15  
Ala Arg Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln  
20 25 30  
Pro Phe Val Tyr Gly Gly Cys Arg Ala Lys Ser Asn Asn Phe Lys Ser  
35 40 45  
Ala Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 124

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> Isoaprotinin 2

<400> 124

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala  
1 5 10 15  
Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Pro  
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ser  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 125  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Isoaprotinin G-2

<400> 125

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala  
1 5 10 15

Arg Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Pro  
20 25 30

Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 126  
<211> 58  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Isoaprotinin 1

<400> 126

Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala  
1 5 10 15

Lys Met Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Phe Cys Glu Thr  
20 25 30

Phe Val Tyr Gly Gly Cys Lys Ala Lys Ser Asn Asn Phe Arg Ser Ala  
35 40 45

Glu Asp Cys Met Arg Thr Cys Gly Gly Ala  
50 55

<210> 127  
<211> 11  
<212> DNA  
<213> Artificial Sequence

<220>

<223> PflMI restriction site

<220>

<221> misc\_feature

<222> (4)..(8)

<223> n is a, c, g or t

<400> 127

ccannnnntg g

11

<210> 128

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> XcmI restriction site

<220>

<221> misc\_feature

<222> (4)..(12)

<223> n is a, c, g or t

<400> 128

ccannnnnnn nntgg

15

<210> 129

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE alpha

<400> 129

Pro Cys Val Ala Met Phe Gln Arg Tyr

1

5

<210> 130

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acids 15-20 of EpiNE-7

<400> 130

Val Ala Met Phe Pro Arg

1

5

<210> 131  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 35-38 of HNE

<400> 131

Tyr Gly Gly Cys  
1

<210> 132  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of BPTI

<400> 132

Pro Cys Lys Ala Arg Ile Ile Arg Tyr  
1 5

<210> 133  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE3

<400> 133

Pro Cys Val Gly Phe Phe Ser Arg Tyr  
1 5

<210> 134  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE6

<400> 134

Pro Cys Val Gly Phe Phe Gln Arg Tyr  
1 5



<210> 135  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE7

<400> 135

Pro Cys Val Ala Met Phe Pro Arg Tyr  
1 5

<210> 136  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE4

<400> 136

Pro Cys Val Ala Ile Phe Pro Arg Tyr  
1 5

<210> 137  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE8

<400> 137

Pro Cys Val Ala Ile Phe Lys Arg Ser  
1 5

<210> 138  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE1

<400> 138

Pro Cys Ile Ala Phe Phe Pro Arg Tyr  
1 5

<210> 139  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE5

<400> 139

Pro Cys Ile Ala Phe Phe Gln Arg Tyr  
1 5

<210> 140  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> amino acids 13-21 of EpiNE2

<400> 140

Pro Cys Ile Ala Leu Phe Lys Arg Tyr  
1 5